08/418870

WHAT IS CLAIMED IS:

1. An adjuvant composition, comprising:

(1) a metabolizable oil and

(2) an emulsifying agent, wherein said oil and said emulsifying agent are present in the form of an oil-in-water emulsion having oil droplets substantially all of which are less than 1 micron in diameter and wherein said composition exists in the absence of any polyoxypropylene-polyoxyethylene block copolymer.

2. The composition of Claim 1, wherein said oil is an animal oil.

3. The composition of Claim 2, wherein said oil is an unsaturated hydrocarbon.

4. The composition of Claim 1, wherein said oil is a terpenoid.

5. The composition of Claim 1, wherein said oil is a vegetable oil.

6. The composition of Claim 1, wherein said composition comprises 0.5 to 20 % by volume of said oil in an aqueous medium.

7. The composition of Claim 1, wherein said emulsifying agent comprises a non-ionic detergent.

8. The composition of Claim 20, wherein said emulsifying agent comprises a polyoxyethylene sorbitan mono-, di-, or triester or a sorbitan mono-, di-, or ~~triether~~ triester

9. The composition of Claim 8, wherein said composition comprises ~~0.01 to 0.5~~ .02 to 2.5 % by weight of said emulsifying agent.

10. The composition of Claim 9, wherein said composition further comprises a separate immunostimulating agent.

11. The composition of Claim 8, wherein said immunostimulating agent comprises alum or a bacterial cell wall component.

12. The composition of Claim 11, wherein said composition comprises 0.0001 to 1.0 % by weight of said immunostimulating agent.

13. The composition of Claim 11, wherein said immunostimulating agent comprises a muramyl peptide.

14. The composition of Claim 1, wherein said emulsifying agent also functions as an immunostimulating agent.

15. The composition of Claim 14, wherein said composition comprises 0.01 to 0.5 % by weight of said immunostimulating agent.

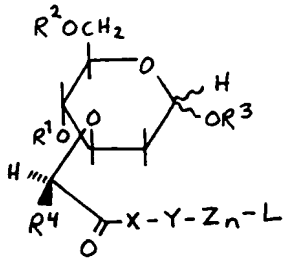
16. The composition of Claim 14, wherein said immunostimulating agent comprises a lipophilic muramyl peptide.

17. The composition of Claim 16, wherein said peptide comprises a muramyl dipeptide or a muramyl tripeptide.

18. The composition of Claim 17, wherein said peptide further comprises a phospholipid.

19. The composition of Claim 18, wherein said phospholipid comprises a phosphoglyceride.

20. The composition of Claim 14, wherein said peptide is a compound of the formula



wherein R is H or $COCH_3$;

R^1, R^2, and R^3 independently represent H or a lipid moiety;

R^4 is hydrogen or alkyl;

X and Z independently represent an aminoacyl moiety selected from the group consisting of alanyl, valyl, leucyl, isoleucyl, α-aminobutyryl, threonyl, methionyl, cysteinyl, glutamyl, isoglutamyl, glutaminyl, isoglutaminyl, aspartyl, phenylalanyl, tyrosyl, tryptophanyl, lysyl, ornithinyl, arginyl, histidyl, asparaginyl, prolyl, hydroxypropyl, seryl, and glycyl;

n is O or 1;

Y is $-NHCHR^5CH_2CH_2CO-$, wherein R^5 represents an optionally esterified or amidated carboxyl group; and

L is OH, NR^6R^7 where R^6 and R^7 independently represent H or a lower alkyl group, or a lipid moiety.

21. The composition of Claim 20, wherein R^4 is methyl, X is alanyl, and Y is isoglutaminyl.

22. The composition of Claim 20, wherein n is 1; Z is alanyl; R is acetyl; and R^1, R^2, and R^3 are all H.

23. The composition of Claim 22, wherein L comprises a phospholipid moiety.

24. The composition of Claim 23, wherein said phospholipid moiety comprises a diacylphosphoglyceride.

25. The composition of Claim 20, wherein said peptide is N-acetylmuramyl-L-alanyl-D-isoglutaminyl-L-alanine-2-[1,2-dipalmitoyl-sn-glycero-3-(hydroxyphosphoryloxy)]ethylamide.

26. The composition of Claim 20, wherein at least one of R^1 and R^2 represents an acyl group containing from 1 to 22 carbons.

27. The composition of Claim 20, wherein at least one of R^1, R^2, and R^3 represents an acyl group containing from 14 to 22 carbons.

28. A vaccine composition, comprising:

(1) an immunostimulating amount of an antigenic substance, and

(2) an immunostimulating amount of the adjuvant of Claim 1.

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29. A method of stimulating an immune response in a host animal, comprising:

administering a protective antigen to said animal in the presence of an immunostimulating amount of submicron metabolizable oil droplets in a continuous aqueous phase and in the absence of any polyoxypropylene-polyoxyethylene block copolymer.

30. The method of Claim 29, wherein said oil droplets further comprise an emulsifying agent.

31. The method of Claim 30, wherein said oil droplets further comprise an immunostimulating agent separate from said oil and said emulsifying agent.

32. The method of Claim 31, wherein said immunostimulating agent comprises alum or a bacterial cell wall component.

33. The method of Claim 31, wherein said immunostimulating agent comprises a muramyl peptide.

34. The method of Claim 30, wherein said emulsifying agent is also effective as an immunostimulating agent.

35. The method of Claim 34, wherein said immunostimulating agent comprises a lipophilic muramyl peptide.